

# P1 update to the pre-assessment and scoping document of EPO skipjack tuna against the Marine Stewardship Council Fisheries Standard

**Confidential Report**  
**Version 1.0**

*Prepared by*

**by Key Traceability Ltd.**  
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## Glossary

Acronym	Definition
CoC	Chain of Custody
CPUE	Catch per Unit Effort
FIP	Fishery Improvement Programme
MSC	Marine Stewardship Council
PI	Performance Indicators
RFMO	Regional Fisheries Management Organisation
UoA	Unit of Assessment

## 1. Update Executive Summary

This document presents the results of a P1 scoring update for EPO skipjack tuna against the Marine Stewardship Council (MSC) Fisheries Standard for sustainable fishing (Version 2.01).

For Principle 1, in 2020 a benchmark assessment for EPO skipjack tuna was conducted by the IATTC that served as basis for a risk analysis of stock status relative to recruitment impairment. This benchmark assessment had to rely on a Productivity and Susceptibility Analysis (PSA) rationale to make inferences about the stock status of skipjack. The PSA for skipjack was achieved by using bigeye results as a baseline for comparison because they occupy similar habitats and are therefore equally at risk of being overfished. However, due to the higher productivity rate of skipjack, it can be inferred that if bigeye stocks are healthy, then skipjack is also healthy.

One of the main reasons for the updated interim assessment was because the WWF allocated the EPO skipjack <60 (red) because of the risk-based analysis (PSA) and the uncertainty of the actual data and statistics for the stock status. There were some tuna companies that were unable to achieve MSC certification as a result of this red rating of the skipjack, which has caused issues with selling their catch and it is assumed that the pressure from these companies is the reason why the Inter-American Tropical Tuna Commission (IATTC) conducted an *interim* assessment.

However, the latest interim assessment indicated that the Eastern Pacific Ocean skipjack tuna are not experiencing overfishing or are overfished. Rather, the stock biomass is over the target reference point and fishing mortality is currently below target fishing mortality. Likewise, the interim stock assessment showed that estimates of uncertainty do not exceed limit reference points.

## 2. Report Details

### 2.1. The MSC Fisheries Standard

There are three principles in the MSC standard:

**Principle 1 – Sustainable fish stocks**, target fish stocks must be kept at a sustainable level.

**Principle 2 – Minimising environmental impacts**, the fishery should be managed in a way that maintains the structure, productivity, function, and diversity of the fisheries ecosystem.

**Principle 3 – Effective management**, the fishery must have a responsive management system in place and management must meet all local, national, and international laws.

Fisheries assessed against the MSC Fisheries Standard are evaluated against 28 Performance Indicators (PIs) within the three principles. There are six performance indicators for Principle 1, split between two components, outcome (2 PIs) and management (4 PIs). Principle 2 has 15 performance indicators split into three components (outcome, management strategy, information) for primary species, secondary species, endangered threatened and protected species, habitats, and ecosystem. Principle 3 has seven performance indicators split between two components, governance, and policy (3 PIs) and fishery specific management system (4 PIs).

PIs are scored for the fishery based on the MSC specific scoring guidelines (SGs). For a fishery to be certified, the fishery must score a minimum of 60 against all 28 PIs and an average of 80 across each of the three principles. Performance indicators that score between 60 and 79 will be given a condition to achieve a score of 80 or above within a specific timeframe. After certification, the fishery will undergo annual audits and will be re-assessed every five years.

The purpose of this pre-assessment is to evaluate the status of the fishery in relation to the MSC Fisheries Standard and to identify deficiencies. A pre-assessment cannot fully duplicate a full assessment against the MSC standard. A full assessment involves expert team members and public consultation stages that are not included in a pre-assessment. A pre-assessment provides a provisional assessment of a fishery based on a limited set of information provided by the client; its conclusions as to the outcome of a full assessment are always somewhat uncertain.

The following key constraints were identified which may influence the outcome of an eventual full assessment:

- No site visit was held for this pre-assessment because of the travel involved. Stakeholders were therefore not consulted.
- No data directly relating to the fishery was collected, this means that scoring has been by extrapolation, especially in relation to bycatch and ETP species under Principle 2.
- This pre-assessment only looks at the regional and sub-regional management. This would need to be considered prior to commencing a full assessment for this fishery.
- Traceability systems in place in the fisheries were not analysed, and it is recommended this is investigated prior to full assessment to ensure compliance with fishery assessment traceability requirements and ascertain whether separate Chain of Custody (CoC) certification at the vessel level will be needed.

## 2.2. Version Details

The report uses the MSC Fisheries Standard v2.01, the Fisheries Certification Process v2.2 and MSC pre-assessment reporting template v3.1. The default assessment tree was used without adjustments. The Risk-Based Framework (RBF) was not used.

The MSC decision rule for reaching the final recommendation is as follows:

- No PIs can score below 60.
- The aggregate score for each Principle, rounded to the nearest whole number, is 80 or above.

The aggregate score for each Principle is the sum of the weighted score of each PI within that Principle.

## 2.3. Principle 1 update

### 3.4.1 EPO skipjack Scoring Update

For this update, EPO skipjack can receive multiple scoring updates. This has been possible due to new interim stock assessment being conducted in 2021 showing favourable results. The interim stock assessment demonstrated that the stock is healthy and not currently undergoing overfishing.

Performance Indicator	Draft scoring range	Data deficient?
<b>1.1.1 – Stock status</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>Stock assessments are difficult to conduct on skipjack tuna due to their high and variable productivity. These characteristics make it difficult to determine the effect of fishing using typical stock assessment techniques. The Inter-American Tropical Tuna Commission (IATTC) conducts assessments of skipjack tuna using various indicators instead of traditional reference points. The most recent assessment conducted in 2018 used eight data and model based indicators 1) catch, 2) CPDF NOA, 3) average weight, 4) relative recruitment, 5) CPDF OBJ, 6) standardized effort, 7) relative biomass, and 8) exploitation rate (Maunder, 2018).</p> <p>The situation in 2017 can be summarised as follows:</p> <ul style="list-style-type: none"> <li>• Total catch, CPUE (both indicators), relative biomass, relative recruitment and standardized effort are estimated to be above the upper reference level.</li> <li>• Relative exploitation rate is close to the historical mean level.</li> <li>• Average weight per fish was below the lower reference level but increased slightly above that level in 2017.</li> </ul> <p>IATTC scientists note that there is concern over the substantial increase in numbers of sets on floating objects in recent years. The low average weight may be an indicator of overexploitation but may also be a function of recent high recruitment and/or changes in selectivity or other characteristics of the fishery.</p> <p>The HCR for EPO tropical tunas is set out in Res. C-16-02 (as bigeye above). It can be expected to keep the biomass above the limit reference point, and most likely above the PRI (given the relatively precautionary probability of <math>B &lt; B_{lim}</math> set as a trigger for management action) and fluctuating around MSY level.</p> <p>Overall, none of the indicators detect any adverse consequences from current levels of exploitation, except smaller average weight, which is unlikely to indicate any effect on recruitment (and may be a consequence of high recruitment). In 2014 the limit reference point (LRP) was implemented by the IATTC at 8% of the unfished biomass. Given this and the resilient life history characteristics of skipjack, it is highly likely that the stock is above any PRI.</p>		

<p>It has not been possible to estimate any credible MSY reference points for EPO skipjack. Indicators suggest that biomass and recruitment are high relative to historical levels. IATTC scientists have also used a productivity-susceptibility analysis (PSA) to compare skipjack status with other stocks for which an assessment is possible: the logic is that skipjack and bigeye have similar susceptibility (overlap with fisheries) but skipjack has higher productivity (and therefore a lower <math>B_{MSY}</math> and a higher <math>F_{MSY}</math>); since for bigeye <math>B_{current} &gt; B_{MSY}</math>, logically (they argue) this must also be true for skipjack. Although this argument is not completely convincing, nevertheless on this basis, SG80 for SIb is met. Since there are considerable uncertainties, and since one of the indicators (average weight) gives some possible cause for concern, SG100 is not met.</p>		
<b>1.1.2 – Stock rebuilding</b>	<b>N/A</b>	<b>No</b>
Rationale or key points		
As PI 1.1.1 scored at least SG80, this PI does not need to be scored (as FCP SA2.3.1).		
<b>1.2.1 – Harvest Strategy</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>In 2016, IATTC adopted a harvest control rule (HCR) for tropical tunas based on the interim target and limit reference points adopted in 2014 (Resolution C-16-02). The HCR aims to prevent fishing mortality from exceeding the MSY level for the tropical tuna stock (bigeye, yellowfin, or skipjack) that requires the strictest management. If fishing mortality or spawning biomass are approaching the corresponding limit reference point with a probability of 10% or greater, the HCR triggers the establishment of additional management measures to reduce fishing mortality and rebuild the stock. The HCR is implemented via time/area closures and catch limits which vary for different fleets (Resolution C-17-02).</p> <p>The duration of the closure is set according to the level of <math>F_{mult}</math> (<math>F_{MSY}/F_{current}</math>) for the stock requiring the strictest management; at present, bigeye. Productivity and susceptibility analysis (PSA; see IATTC Fishery Status Report 12, Figure L-4) shows that skipjack has substantially higher productivity than bigeye. Therefore, given PSAs conducted it is possible to say that for SKJ, the harvest strategy is expected to achieve stock management objective for SIa, so SG60 is met. With the 2022 interim stock assessment, it is clear that the harvest strategy is achieving its objectives in maintaining stocks at target levels because the assessment demonstrated that biomass is about the target reference point and fishing mortality is below target fishing mortality. Therefore, SIb meets SG80.</p> <p>The harvest strategy is implemented by restricting effort of the entire fishery for yellowfin, bigeye, and skipjack, and in theory would be likely to work. SG60 is met for SIb. At the SG80 level, the harvest strategy does not need to have been tested, but there should be evidence that it is achieving its objectives. Since it is assumed that skipjack is a more productive species, at the application of the HCR, it follows that the probability of this stock to exceed the LRP would be even smaller than for bigeye, so the skipjack stock is protected by proxy. Additionally, the harvest strategy has worked effectively for many years and in the latest years, both biomass and recruitment have been increasing</p>		



over the past 20 years and were above their respective upper reference levels in 2015 and 2016 (Mauder, 2019). Therefore, the current harvest strategy is considered to be achieving its objectives. This meets the SG80 level for Sib.

The harvest strategy is well monitored both in terms of the status of the stock and the catches and fishing mortality rates affecting status. Data are collected to estimate management quantities. Also, the stock assessment reports best estimates of biomass, which indicates whether management is achieving its objectives or not. SG60 is met for Sic.

C-17-02 requires review of the harvest strategy during 2018 – 2020, see para. 26. It is, however, unclear how this will apply in this case, since it is not clear in the first place how the reference points can be applied to skipjack. A variety of efforts to develop a stock assessment model and estimate MSY or other reference values have been unsuccessful. In addition, higher priority for MSE is given to yellowfin and bigeye tuna, as available data indicate that these species are more susceptible to overfishing than skipjack. SG100 is not met for Sid (note that for Sid, there is only one scoring guidepost, which is SG100).

This fishery targets skipjack specifically, and there are no requirements such as minimum or maximum landing sizes or quotas which could lead to any of this catch being unwanted. C-17-02, paragraph 24 states all bigeye, skipjack and yellowfin brought on board is required to be landed, except that unfit for human consumption. Sle and Sif meet SG80.

### 1.2.2 – Harvest control rules and tools

≥80

No

#### Rationale or key points

The HCR for EPO tropical tunas is set out in Res. C-16-02 (as bigeye above). It can be expected to keep the biomass above the limit reference point, and most likely above the PRI (given the relatively precautionary probability of  $B < B_{lim}$  set as a trigger for management action) and fluctuating around MSY level. The HCR is explicit (that *if  $F > F_{MSY}$  it will be returned to  $F_{MSY}$* ), quantitative, and measurable, and is therefore considered well-defined, in place and ensure that the exploitation rate is reduced as the PRI is approached, are expected to keep the stock fluctuating around a target level consistent with (or above) MSY. An interim stock assessment was conducted by IATTC in 2022 and demonstrated that the stock biomass for skipjack tuna is above target reference points and fishing mortality is below target fishing mortality.

The strategy has been tested preliminarily for BET for main uncertainties about the steepness in the stock recruitment relationship, asymptotic length, and natural mortality in a management strategy evaluation. Given the differences in life history and the nature of the fisheries in the EPO, managing skipjack based on the measures put in place for yellowfin and bigeye is likely to be a robust strategy, despite the numerous uncertainties regarding the skipjack stock. SG80 is met for Sib.

The tools to implement the HCR are set out in Res. C-17-02; the key tool is the seasonal closure. They were selected by IATTC because they have been used in the past and/or can be used over periods longer than a year (see C-16-02); i.e., IATTC have taken a pragmatic approach to the selection of

<p>appropriate tools. The closure is not explicitly linked to the HCR, nor is there a clearly defined trigger value for skipjack; the HCR relies on the assumption that yellowfin and bigeye will always need management first (which is not unreasonable). SG60 is met for SIc. There is provision for review and adjustment according to outcome, and regular review of a variety of indicators for skipjack ensure that stock status is tracked. On that basis, the available evidence all indicates that the tools are likely to be effective controlling exploitation rates as the stock appears to be fluctuating around MSY and therefore achieving the stock objective. The 2022 interim stock assessment demonstrated that the HCRs are being evaluated and are effective in achieving the exploitation levels required under them. SIc meets SG80.</p>		
<b>1.2.3 – Information and monitoring</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>Sufficient information (on stock structure, stock productivity, fleet composition), is available to monitor and assess stock status including reporting and size-frequency sampling by each fleet and catch-per-unit-effort data from these fleets. These data are sufficient for to monitor status and mortality rates to support the harvest strategy. SG80 is met for SIa. However, the data are limited relative to direct estimates of stock productivity or determine accurate MSY reference points. SG100 is not met.</p> <p>Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the HCR, and indicators of catch and effort are available and monitored with sufficient frequency to support the HCR, including annual updates of the stock assessment (better practice than other tRFMOs). SG80 is met for SIb.</p> <p>Catches are reasonably well monitored and are sufficient for stock assessment. There has been an IATTC observer program since 1993 for larger vessels, and the United States has had an observer program from the 1970s. Observer coverage has allowed discards of tuna to be estimated, as well as estimates of bycatch of other species. The level of monitoring is sufficient for the harvest strategy, and therefore meets SG80 for SIc.</p>		
<b>1.2.4 – Assessment of stock status</b>	<b>≥80</b>	<b>No</b>
Rationale or key points		
<p>The most recent formal age-structured stock assessment for EPO skipjack (2005) is still considered preliminary, because it is not clear whether standardised CPUE is a good indicator of abundance for skipjack. A full stock assessment was also attempted in 2012 but was rejected as did not provide a reliable assessment. Therefore, since then, IATTC scientists have focused on a series of data- and model-based indicators which are updated annually and used to evaluate relative status; other approaches have been tried periodically but mainly discarded as unsuitable or unrealistic. The most recent update in 2018 evaluates stock status in 2017 via these indicators and their reference levels (historical mean with 90%CI). On this basis SG80 but not SG100 is met for SIa.</p>		

The primary monitoring method is now based on relative changes in eight indicators. These have reference levels based on the approximate 5th and 95th percentiles of historical values (see PI 1.1.1 for details). Together these are used as proxy indicators of stock trends over time. These reference points are stock-specific rather than 'generic', they are an appropriate approach given data limitations, and they can be estimated – in fact they are updated each year. SG80 is therefore met for SIb.

The use of empirical, trends-based indicators rather than a model-based assessment already deals with a significant source of uncertainty (Maunder and Deriso, 2007). The indicators present the behaviour of the stock and the fishery through relative measures of parameters such as abundance and recruitment. The reference levels are associated with 'confidence intervals' (based on the SD of the time series). The assessment approach also takes uncertainty into account in as much as it accepts that the outputs of a formal stock assessment are likely to be too uncertain to be meaningful. SG80 is met for SIc. The current approach is not however evaluating stock status relative to reference points in a probabilistic way (given that the skipjack stock does not have its own reference points). SG100 is not met.

The assessment has not been tested and shown to be robust. Many alternative hypotheses exist without formal evaluation. It has been suggested that this stock assessment (and management) would benefit from a full management strategy evaluation which would help to rigorously explore assessment approaches and couple them with management evaluation in the context of harvest control rules. SG100 is not met for SId (note that for SId the only scoring guidepost available is at SG100).

The stock assessment is subject to review through internal review processes where model structure, data and research are examined for the assessment. The review process has led to rejection of the previous assessment. There is no evidence of external peer review for this stock assessment, or whether the indicators are sufficient for the harvest strategy. Only SG80 is met for SIe.

### 3. Recommendations and scoping

There is no need to update this section for this update as the scoring update of EPO skipjack tuna regarding Principle 1 of the MSC standard achieves SG 80. However, a full stock assessment could be beneficial to verify the findings from the *interim* assessment and ensure that the stock is being appropriately managed according to the stock status.

## 4. References for update

Aires-da-Silva, A., Maunder, M.N., Xu, H., Minte-Vera, C., Valero, J.L., Lennert-Cody C.E. 2020. Risk Analysis for Management of the Tropical Tuna Fishery in the Eastern Pacific Ocean, 2020. Eleventh Meeting of the IATTC Scientific Advisory Committee, (Videoconference), 26–28 October 2020. SAC-11-08 REV.

IATTC Fishery Status 2019. Report on the Tuna Fishery, Stocks and Ecosystem in the Eastern Pacific Ocean in 2018. Inter-American Tropical Tuna Commission 94th Meeting, La Jolla, California, 2019. Bilbao, Spain 22–26 July 2019. IATTC-94-01.

## **Appendices**

### **Assessment information**

#### **Small-scale fisheries**

No small-scale fisheries were identified for any of the UoAs listed in this pre-assessment.

### **Evaluation processes and techniques**

#### **Site visits**

A site visit was not conducted for this pre-assessment.

#### **Recommendations for stakeholder participation in full assessment**

Stakeholders were not conducted for this site visit. However, for the full assessment it will be important to engage with the following groups of stakeholders:

- Overlapping fisheries (certified and in assessment).
- Overlapping Fishery Improvement Projects (FIPs).
- NGOs with an interest in the fishery.
- Regional Fisheries Management Organisations.
- National management authorities for which the fisheries may operate.

## Harmonised Fishery Assessments

Harmonisation will be required in the case of this fishery. It should be noted that by the time this fishery is ready for MSC full certification, more fisheries may well have become MSC-certified. Table 1 below lists the overlapping fisheries at the time of this report being written.

**Table 1 – Overlapping fisheries with this assessment.**

Fishery name	Certification status and date	PIs to harmonise
WPSTA Western and Central Pacific skipjack and yellowfin free school purse seine	Certified June 2018	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
Tri Marine Western and Central Pacific skipjack and yellowfin tuna	Certified June 2016	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
North-eastern tropical Pacific purse seine yellowfin and skipjack tuna fishery	Certified September 2017	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
PT Citraraja Ampat, Sorong pole and line skipjack and yellowfin tuna	Certified November 2018	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
PNA Western and Central Pacific skipjack and yellowfin tuna	Certified December 2011	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
Japanese Pole and Line skipjack and albacore tuna fishery	Certified October 2016	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
Tropical Pacific yellowfin and skipjack free-school PS fishery	Certified October 2019	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
PNG Fishing Industry Association's purse seine skipjack and yellowfin tuna	In assessment	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
Ishihara Marine Products albacore and skipjack pole and line fishery	Certified March 2019	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4
Japanese pole and line skipjack and albacore tuna fishery	Certified October 2016	PI 1.1.1, 1.2.1, 1.2.2, 1.2.3, 1.2.4